Sensory-inclusive Learning Environments

Additional Support for Learning

Scottish Government
Riaghaltas na h-Alba

1 Foreword

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Scotland's vision is clear: to give everyone the skills and opportunities they need to thrive at every stage of learning and in every part of the country. Children, young people and learners of all ages reaching their full potential in life and work is not just a goal; it's a national priority.

Inspired by the Additional Support for Learning Parliamentary Inquiry which highlighted the importance of physical learning environments on user experiences, this guide has been collaboratively developed with a wide range of stakeholders. This included pupil representatives, teachers, parents, designers, local authorities, academics, charities and support groups.

The design and operation of the places where we learn can make a real difference to whether some learners feel able to participate fully, and to how their teachers and support staff are best able to support and nurture learners. This guide aims to increase awareness of how some people can experience environments with intensity and suggests sensory adaptations and accommodations to physical environments and activities to allow everyone to thrive.

While the focus of this non-technical guide is on the teaching and learning experience, many schools and learning environments are used as a community resource too. Creating a neuro-affirmative and sensory inclusive learning environment will also enhance the experience for wider uses by members of the public using the space for community, sport and leisure activities.

I would like to thank all of those who have contributed to the creation of this guide which provides an informative and useful resource to improve understanding of sensory differences and create physical environments which enhance learning and teaching experiences for everyone.

Jenny Gilruth MSP
Cabinet Secretary for Education and Skills

Acceptable language and preferred terminology are likely to change over time, particularly in emerging fields like neurodiversity. This will be monitored and amendments may be made over time.

This guide is sponsored by the Scottish Government and has been developed by Scottish Futures Trust, Architecture and Design Scotland and Buro Happold Inclusive Environments Team.

SCOTTISH FUTURES TRUST

Architecture & Design Scotland
Ailtearachd is Dealbhadh na h-Alba

BURO HAPPOLD

Contents

> **“The physical environment in which children and young people are placed can support or harm and hinder – even subtle changes can make a significant difference to learning, achievement and wellbeing. This can be very extreme for people with sensory differences and disabilities.”**

2 Introduction

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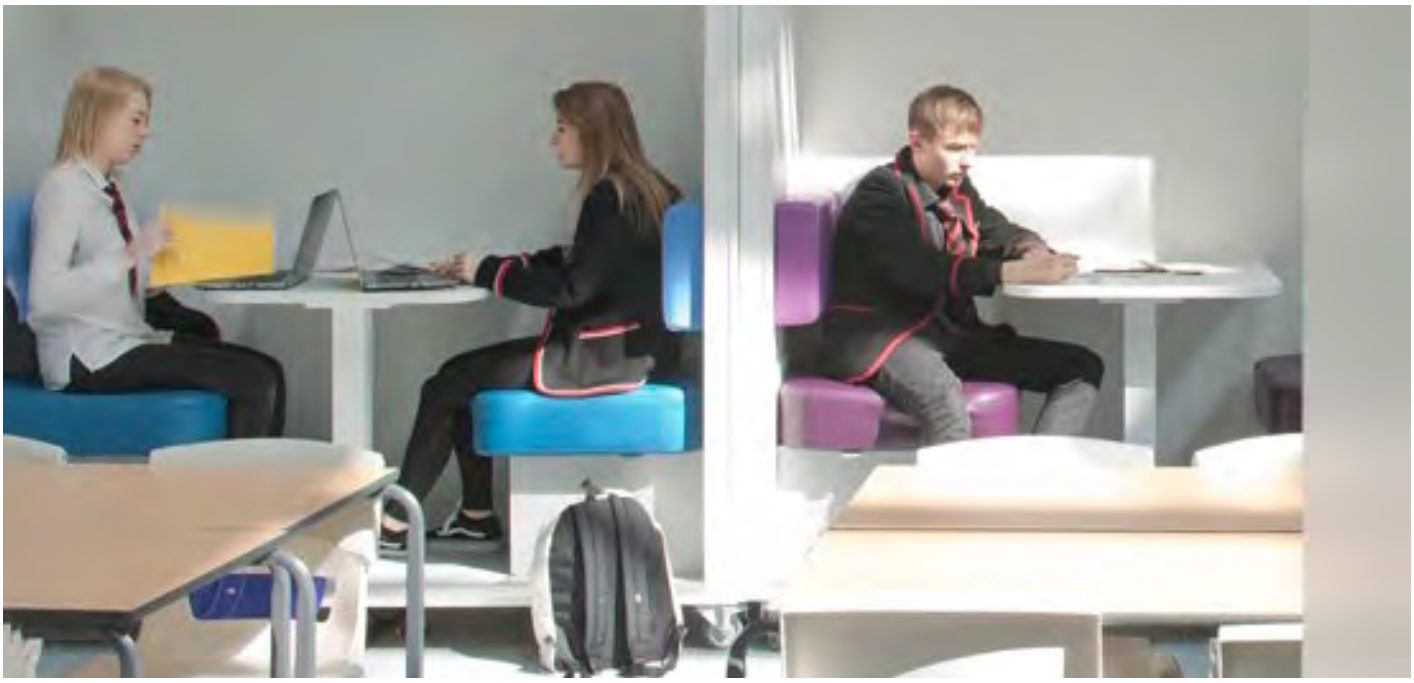
This guide aims to raise awareness of the sensory variation among individuals and how nursery and school age learning and teaching experiences can be impacted by physical environments. It is a short, non-technical resource designed for any learning environment including satellite/ hub settings or any out of school informal settings, and schools of all sizes and age groups. Intended readers include:

- Educators and support staff;
- Designers of new and existing buildings and external learning spaces;
- Estates/Facilities Management who maintain and operate learning environments;
- Local Authorities responsible for early years settings and schools;
- Children and young people (or their representatives) wherever learning takes place;
- Parents/carers of children and young people.

While the focus of this guide is on the teaching and learning experience for education purposes, many schools and learning environments are used as a community resource too. Creating a neuro-affirmative and sensory-inclusive learning environment will also enhance the experience for wider uses by members of the public using the space for community, sport and leisure activities.

> **“The physical environment is impactful in every way - dysregulation is often linked to the sounds, lights, patterns and smells in the physical environment.”**



A thoughtfully designed and managed environment can support excellent learning, teaching and engagement. Conversely, a lack of awareness and consideration for sensory differences and disabilities can result in environments that contribute to:

- Lower participation;
- Reduced achievement;
- Higher absence;
- Increased anxiety;
- Poorer mental health outcomes;
- Gaps in learning;
- Increased avoidance and absence;
- Inability to self-regulate (dysregulation).

Places where learning happens, wherever that may be, should provide a safe sanctuary for teaching, learning, development and social integration, where staff and learners can be comfortable and able to thrive. A "one size fits all" approach is not the solution, but with understanding, flexibility and planning, spaces can be created that will work better for everyone.

The challenges experienced by people with sensory differences or disabilities cannot be addressed purely through changes to the built environment. There will always be the need for learning activities to be planned considering the characteristics of the available learning environment and this requires awareness, communication, empathy and appropriate support arrangements based on person-centric evidence.

2.1 Scope of guide

This guide does not attempt to define specific conditions and associated symptoms or challenges; it takes a broad, pragmatic approach to the information and sensory processing differences severely impacting many people every day.

The design and operation of the places where we learn can make the difference as to whether some learners feel able to attend and participate fully or not. This guide therefore aims to increase awareness of how some people can experience environments with intensity and suggests "sensory adaptations and accommodations" to physical environments and activities to allow everyone to thrive.

2.2 Neurodiversity

Neurodiversity is the natural and normal genetic variation in brain types or profiles across the human population. Neurodiversity recognises the variety of ways in which individuals interact with and process sensory information, experience places and communicate with others. As explained in BSI PAS6463 2022, such differences can be broadly grouped as:

"a) **neurotypical** - someone fitting a majority neurological profile;

b) **neurodivergent** - someone outside the majority neurological profile (commonly associated with autism, attention deficit hyperactivity disorder, dyslexia, dyspraxia, dyscalculia, dysgraphia and Tourette's syndrome – but there is no definitive list of conditions associated with neurodivergence); and

c) **neurodegenerative** (whereby sensory processing differences develop over time through brain diseases, such as different forms of dementia or Parkinson's)".

A significant proportion of people who are neurodivergent or neurodegenerative experience information and sensory processing differences which can lead to challenges in some environments.

Sensory difference describes the way the body communicates sensations to the brain, creating a variation in how individuals experience and process sensory information compared to the perceived societal norm. This may include sensory experiences that are:

- Hypersensitive - stronger reactions resulting in over-stimulation;
- Hyposensitive – lower reactions resulting in under-stimulation.

People can be hyper or hyposensitive to one or many aspects, or may experience a mix of hyper and hypo sensory differences which can vary in intensity, particularly when feeling stressed or anxious. Sensory experiences may affect any of the senses, including:

- Visual (sight);
- Auditory (hearing);
- Tactile (touch);
- Olfactory (smell, hyperosmia);
- Gustatory (taste);
- Vestibular (balance and spatial orientation);
- Proprioceptive (movement, proximity, coordination);
- Interoceptive (hunger, thirst, tiredness, pain, temperature).

Over-stimulation is often cumulative, from multiple factors in the environment, such as a combination of noise, and light intensity (but can also occur from a single intense source).

2.3 Other sensory differences

Although some 70% of neurodivergent people are believed to experience hypersensitivity through one or more of the senses, such sensory differences can be experienced for a very wide range of reasons, including:

- Sight loss – people can be affected by too much lighting or glare due to low vision due to a sight loss condition;
- D/deaf people can experience hypersensitivity as well as different degrees of hearing loss or difference and may include intermittent symptoms such as tinnitus, difficulty with balance. Some people may have a temporary inability to hear due to conditions such as Labyrinthitis or Glue Ear.

Sensory differences and disabilities can be present from birth, but can also be dynamic and change over time, through acquired differences throughout life. Experience can be influenced by a range of circumstances including trauma, injury or stress, as well as hormonal changes, particularly in girls and women (e.g. puberty, periods, pregnancy and menopause). General health issues like having an injury or infection can also alter sensory experience, such as hearing loss, tinnitus, increased sensitivity to light, reduced sense of smell and taste or dizziness.

In addition, there are age-related degenerative medical conditions affecting adults who may be using the facilities, such as family members, teaching staff, volunteers and external support providers. These challenges do not sit in silos but impact one another and can affect overall wellbeing and resilience.

2.4 Living with sensory differences and disabilities

In addition to sight and hearing loss and sensory processing differences, there are also behavioural, communication and memory differences that may be experienced such as:

- Challenges with understanding numbers, words or graphic symbols;
- Stronger or weaker sensations of pain or temperature (weaker sensations can result in failure or delay in recognising these until extreme);
- Stronger or weaker sensations of bodily needs such as thirst, hunger or needing the toilet (weaker sensations can result in failure or delay in recognising these until extreme);
- Differences in perception of danger;
- Difficulty in judging physical position in a space and proximity to objects or people;
- Easy distraction or deeply focused attention span;
- Difficulties with orientation, wayfinding and navigation;
- Not being able to determine if you are hot or cold making clothing choices difficult;
- Masking (particularly girls), hiding or suppressing neurological differences.

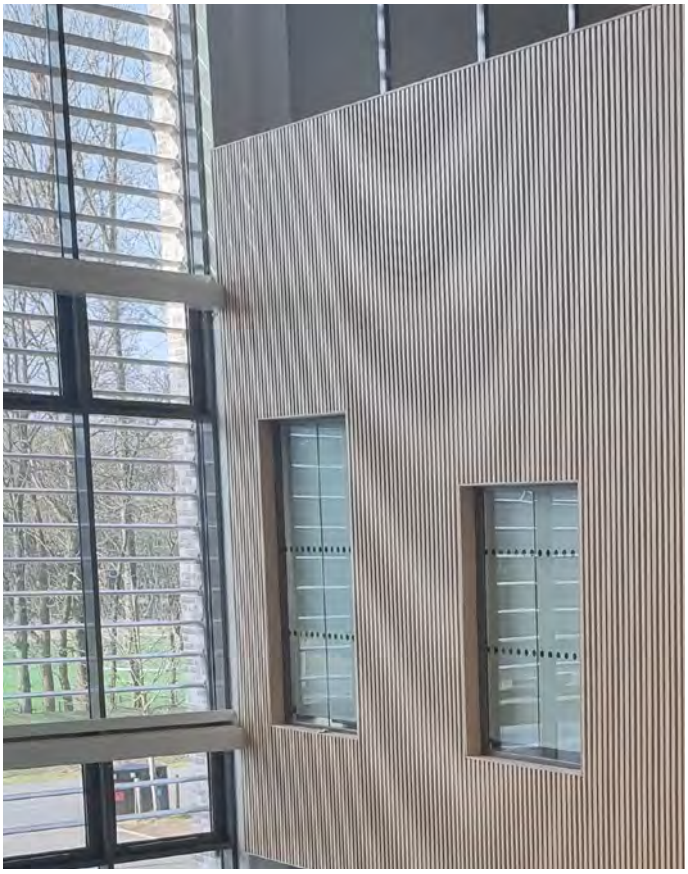
Due to these experiences, feelings may be described as intense frustration, irritability, anger or sadness, sometimes to a state of complete overwhelm and/or loss of emotional control. This is called dysregulation (or emotional dysregulation). The impact can be so significant and overwhelming that the individual may, if they do not have a "flight", option, have a "fight" or "freeze" reaction. These are often referred to as a "melt-down" or "shut down" respectively. Such overwhelming reactions are deeply distressing for the individual and can also be disruptive or upsetting to others. The physical learning environment can easily contribute to this, creating a perceived "bombardment" on the senses, for example simultaneously being too bright, noisy and busy. It is important to see sensory differences and the potential impacts through a broad lens and to acknowledge that a holistic approach is always needed.

A **melt down** is a "fight" response and may appear similar to a tantrum in a very young child, but it is not about wanting a specific item and is completely beyond the individual's control. It is triggered by anxiety from an overwhelming situation, which could be a sensory or social situation. Meltdowns can happen at any age and are often slow to end.

A **shut down** is a "freeze" response, when an individual is often unable to communicate and may withdraw completely for a while or experience situational mutism. It is triggered by anxiety from an overwhelming situation, which could be a sensory or social situation. Shut downs can be misinterpreted as sulking or rudeness but the individual is not in control, it is an instinctive reaction.

2.5 Age related differences

In addition to sensory and information processing differences, there will also be changes in structure and learning style related to age. There is likely to be a mix of individual and group activities as children progress, moving from play-based learning to developing skills, greater independence and autonomy, allowing them to choose how to socialise or manage any environmental impacts at secondary level. The impact of the physical environment can be greater where self-advocacy, communication and management is not at the individual's disposal, or they are unlikely to have the level of understanding of why they are reacting. The static class groups and close teacher contact structure of primary age learning is typically replaced by a more varied and dynamic experience at secondary level, which can bring additional stress and anxiety for older learners. Adjustments and accommodations therefore need to consider age related challenges.



Example of creating visual distortion with blinds against window creating lined shadows over wood panel surfaces.

2.6 Sensory experience and physical learning environments

When interacting with the environment, sensory differences can affect how a space is interpreted and enjoyed. The characteristics of the space will influence experiences, as will the types of activities undertaken. The range of variation is vast, but a few examples which can cause distraction, anxiety or overwhelm include:

- Fixating on repetition of patterns e.g. lines on carpets or ceiling grids;
- Nausea and visual disturbance caused by busy patterns;
- Disorientation and glare from strong light and shade patterns like slatted blinds;
- The feel of surfaces that give an enduring sense of touch that can last all day (such as dimpled laminate desktops);
- Soft repetitive sounds, like a ticking clock or someone chewing which can significantly distract attention;
- Sudden loud sounds;
- Shadows on floors perceived as barriers or holes;
- The smell of people, clothes, food, chemicals, plants which can feel overpowering;
- Proximity and unpredictability of congested spaces.

2.7 Sensory inclusion champions

Identifying people in a school or learning community (staff, children, young people, parents, carers) with awareness, drive and empathy to champion sensory inclusion is helpful. Champions should be passionate about sensory inclusion as well as having a broad understanding of everyday challenges experienced by people with sight, hearing, neurodivergence and related sensory differences or disabilities. Champions do not need to have a high level of technical competence but should be comfortable and confident to influence others and raise awareness.

Champions may be helpful in generating a map of where sensory stimulation and overload is likely and where quiet and calm spaces can be found can be a helpful tool. Involving children and young people in conducting a sensory audit of the learning environment could increase awareness of individual differences people experience and the characteristics of the spaces available. For learners whose needs are often misinterpreted by others, this is especially important. Findings can be presented in sensory maps using thoughtfully selected visual symbols, tactile and audio, so that children with sight or hearing loss or hypersensitivity have the opportunity to be forewarned about an environment where possible.

2.8: Consultation and engagement:

Regular engagement with users of learning spaces is critical for ensuring that the environment continues to meet a variety of needs over time. From formal Post Occupancy Evaluations at the start of occupation, to regular pulse checks and collecting feedback in different ways, user feedback is critical to a successful outcome.

Resources:
Deeper, technical content on buildings, places and spaces is available in the free to download, PAS 6463 "Design for the Mind – Neurodiversity and the Built Environment" guidance published in 2022 by the British Standards Institute. PAS 6463 was developed with a UK steering group of experts and subjected to extensive public consultation, however it is aimed at all buildings and therefore lacks specific examples from learning environments. The PAS is intended to be a technical guide, whereas this publication has easier to digest content specific to the places where learning happens, and provides a segway to the content in PAS6463 when further technical detail is needed.[1]

General guidance on designing for sight and hearing loss can be found in:

BS8300 parts 1 and 2 2018

The RIBA inclusive design overlay provides more information on the broader role of a wider access and inclusion champion appropriate for larger build projects and the way inclusive design should be considered at all stages of a project.

Guidance on designing for people with sensory differences through sight or hearing loss is included in national regulations and BS8300 Codes of Practice, plus publications by the RNIB and RNID and other sight and hearing loss charities. Very recent good practice spatial and inclusion guidance can be found in the freely available Accessible and Inclusive sports facilities guidance 2024 by Sport England.

Comprehensive guidance on Stakeholder engagement can be found in Sport England's AISF Part G "Consultation and Engagement."

1 PAS6463 primarily covers hypersensitivity rather than hyposensitivity as this has the greatest impact from the built environment where sensory intake cannot be easily controlled.

3 Benefits of sensory-inclusive learning environments

3. Benefits of sensory-inclusive learning environments

Just as learning providers anticipate there will be mixed ability across the year group, it is also useful to expect that everyone has sensory differences at different times to varying degrees. A "learner first" approach should aim to reduce stigma, isolation and dysregulation. This requires a holistic approach with:

- **Awareness** of the needs of individuals;
- **Understanding** of spaces and how they can be adapted;
- **Flexibility** to allow individualised learning.

The potential benefits of working towards a sensory inclusive environment include:

- Increased integration, wellbeing and inclusion for staff and learners;
- Enhanced learning and academic performance;
- Fewer behavioural challenges which are disruptive for everyone;
- Increased and meaningful attendance;
- Improved independence;
- Cost effectiveness – modifications to classroom design and management can help reduce impact on teachers, leading to less absence or loss of key staff, and less need for separate facilities.

4 Overview of design, management and use of physical learning environments

4 Overview of design, management and use of physical learning environments

Physical spaces, both inside and outside, play a key role in user experiences, and even subtle changes can positively contribute to calm, focused learning and wellbeing.

The design principles and interventions fall broadly under three umbrellas, **Clarity**, **Choice** and **Calm**. These are the three underlying aims of creating a sensory-inclusive environment. which are explored in this guide, with a summary provided below.

Clarity

Choice

Calm

Together, giving users back control

Clarity:
Easy to navigate, intuitive, familiar

Achieved through:

- Clearly identifiable, welcoming entrance with the choice of using quieter secondary routes;
- Providing advance information before you enter or transition between spaces;
- Allowing preview virtually or by looking in (glazing and good sightlines);
- Avoiding long or twisting corridors, alleys or places where you cannot see what is ahead;
- Clear signage and waymarking;
- Predictable layouts, furniture and fittings;
- Spatially appropriate for the number of users and type of activities;
- Avoiding startling or bright aesthetics.

Choice:
Users have some options and control over their experience

Achieved through:

- Where possible, individuals are able to influence their location and stance, e.g. sit in a quieter space or with their back to a wall (prospect and refuge position) or stand near a mural or view out;
- Flexibility to enable different environments to be quickly created for different activities or to meet specific learner preferences;
- Sensory adjustments users can control e.g. light, glare, noise, furniture;
- Portable shared resources and equipment that can be relocated, such as spin seats, headphones, stimming devices, breathable* weighted blankets, weighted lap pads or toys;
- Facilitating a break or change of environment if needed, such as quiet rooms or break out space with the choice to be either remote or alongside peers.

*Any items need to be checked for safety and appropriateness for the specific user.

Calm:
Lower stimulation through sound quality and appearance

Achieved through:

- Muted colours, patterns from nature;
- Carefully designed acoustics (reducing echo and improving clarity of speech);
- Adjustable lighting – dimming, colour temperature;
- Creation of dedicated low stimulation spaces to reset/recover;
- Furniture that is soft, flexes to facilitate grounding (a technique of bringing focus to a physical space or to the body, moving away from intrusive thoughts and anxiety);
- Optional Sensory stimulation – movement, stim, tactile, music if needed.

4.1 Connecting with nature

From views to outside greenspace, to the regular use of nurture huts, forest classrooms and outdoor spaces, connecting with nature throughout the day is helpful and therapeutic for everyone. This can be achieved through:

- Maximising views out;
- Natural ventilation, fresh air, water features and humidity control;
- Choosing natural materials inside, such as timber and stone;
- Reflecting organic shapes from nature inside (biomimicry);
- Displaying calming images of nature, such as a woodlands' mural, sea views;
- Having appropriate plants inside and out which everyone can care for.

The application of biophilic design principles strengthens our connection with nature and this can be achieved through appropriate use of textiles, artwork, patterns as well as real plants and views.

Gardens that allow children to participate in growing and nurturing plants are encouraged, giving the opportunity to plant, touch, pick or crumple leaves to experience their scents and tactility. Sensory gardens can provide an immersive experience and can be therapeutic in allowing a place to reset as well as stimulate the senses if preferred.

The following considerations should be taken into account where children can reach and/ or are encouraged to touch and interact with plants:

All plants should be non-toxic;

- Plants should ideally be low allergen (avoid wind pollenated plants and choose female trees as they do not produce pollen);
- Plants should not have prickly or sharp leaves;
- Plants close to faces should not have hard branches that might cause eye or facial injuries;
- The smell of plants can be both calming and distressing for different people. Planting should be arranged to provide different levels of stimulation to suit sensory preferences.

Resources:
For further information see AISF Part B sections 6.1 and 7.4. Accessible and inclusive sports facilities - Part B External areas

When developing the brief for new schools or major refurbishments, cross reference to PAS 6463 section 4 which contains specific considerations for neurodiversity as the project develops through the RIBA Stages. There is an Inclusive Design Overlay for the RIBA Plan of Work which should be reviewed for wider inclusion aspects.

Design Elements for School Grounds - Architecture and Design Scotland Design elements for school grounds: ideas to inspire | A&DS

Nature by Design: The Practice of Biophilic Design — Stephen R. Kellert (2018)
Ideal for primary schools because it includes **clear examples of biophilic design in educational settings**, showing what good vs. poor biophilic design looks like in places such as **schools, healthcare, and workplaces**. The strong visuals help educators envision child-friendly nature-integrated spaces.

Journal of Biophilic Design

4.2 Assistance animals

Some staff or learners may have assistance or emotional support animals. For example, dogs can be trained to warn their owners of the start of an epileptic episode, be reassuring to children with anxiety conditions, give warnings for people who are D/deaf, and guide people with sight loss. Allowance may be needed to create designated outside or inside spaces.

5 Space and movement

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5.1 Spatial

Spaces can feel too open or too enclosed, too expansive or too congested, and what suits one individual may not be ideal for another. When a space feels too expansive it may be useful to introduce zones, small pockets and activity areas. A space that is too small for the purposes intended may require a wider assessment of alternative spaces and activities to ensure appropriate space is available. A variation in build and height of users should be considered alongside potential mobility aids as well as the variety of potential activities taking place.

5.2 Large spaces and opportunities for retreat

Large open playgrounds, social/dining spaces or halls offer good sightlines and natural supervision. However, they can feel busy, noisy, distracting, daunting and overwhelming for some people. Smaller pockets of space adjacent to large spaces can feel more protected, such as seating where someone can sit with their back to a wall, fence or planting without fear of being approached from behind, (place of prospect and refuge). This will also allow individuals to see others safely from a distance if they are not ready to socially engage.

5.3 Large spaces – zoning

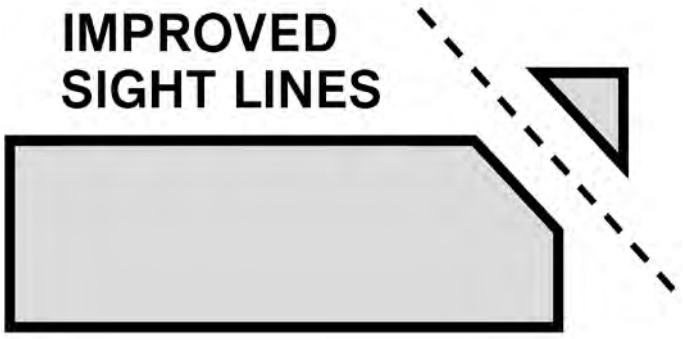
Large open spaces can be particularly difficult to process as they are much more likely to be visually stimulating and provide sound distractions and echo, reducing speech clarity. When these types of spaces are busy, this can become overwhelming. Reducing the perceived scale of large spaces can be helpful, for example social spaces, dining, assembly and sports halls, may benefit from having portable/moveable screens (or curtains where appropriate) to create smaller areas or zones. If these are consistently positioned and used for certain activities, they will soon become familiar to learners. Where screens or curtains are not possible, other forms of marking boundaries between different space types can be helpful, such as a change in floor or ground surface finish by careful placement of interlocking vinyl or carpet squares (it is important to ensure these do not present a trip hazard or a barrier for wheelchair users). Acoustics are a very important consideration in larger spaces, see section 8 of this guide for further information.

5.4 Doors and gates

The general design and performance of doors is covered in regulations and technical standards, with additional recommendations in acoustic standards for sound performance, but the door handles are less mandated and can sometimes be a challenge. Doors or gates that are pull and push operated should only have a handle on the pull side to avoid confusion. Ironmongery should be intuitive to operate to operate for the intended users. Adding soft close to internal doors, including cupboards, is helpful. When replacing doors or gates, the addition of vision panels or openings gives opportunities to preview before entering a space which is helpful for many in reducing any apprehension.

5.5 Circulation spaces

Corridors, lobbies and alleyways are often very challenging as they can be long and unpredictable (if they do not have good sight lines) or can become busy and noisy. In addition to acoustic considerations, shorter links are welcomed, and identifying alternative quieter routes where these are available can be helpful. Sight lines are improved with chamfered corners or rounded/curved walls where these are possible to include, and wider routes that give plenty of space to move out of the way to avoid the crush are beneficial. Recessed areas to break up the space may be helpful.



Visually impaired people may use a long cane sweeping from side to side in front of them as they move, whereas other people with sight loss may rely on touching walls and furniture to guide themselves. Someone with a balance condition may need to support themselves by touching walls or furniture, or holding on for support as they move. There is no one way for users to interact with the environment around them, even if they experience similar challenges.

5.6 Movement and congestion

In situations where groups or classes move simultaneously through corridors or stairways, such as at lesson breaks, it may be useful to allow some people to move earlier to avoid noisy, crowded routes. For lunchtimes, (particularly in larger settings), busy queues could be avoided by having scheduling that is not tightly aligned to age groups and class. Some learning environments stagger times when people move around to reduce congestion and associated noise which can cause anxiety or have the option to pre-order food to reduce queue time and allow a dispersed dining experience. Similarly, some have a “no bell” approach which avoids sudden, loud noises which can increase stress.

5.7 Familiarity and stimulation

Some may find moving positions within a learning environment unsettling, while others will enjoy the fresh perspective and find this stimulating in a positive way. Allowing learners to choose gives some degree of user control.

Where older learners are required to move classrooms regularly, such as is often the case in secondary schools, it may be beneficial for some individuals to be able to choose a similar position in each classroom- for example, to avoid proximity to sources of noise or have position of prospect and refuge. It may also be helpful for some learners to have a seat near the door if escape to a quieter space is a regular need and this autonomy can be safely permitted.

5.8 Activity and movement

Regular physical movement is essential for some people in preventing dysregulation. Gym balls, or small trampolines sunk into the ground in appropriate locations can be beneficial but require a safe protected area with appropriate supervision. Markings on floors and external spaces can encourage movement by creating "stepping stones," routes or games as appropriate.

For some children and young people, the ability to pace, swing arms, move and fidget, alongside stimming can be reassuring. Ensuring zoning and furniture positions are spatially uniform and give enough movement space will help accommodate these activities.

Places to dwell, such as a bench or a view outside, can help a child to transition between being very active and managing to sit relatively still for classwork. In addition to general whole class opportunities for movement, for some learners allowing mini-informal movement without disrupting the class is helpful. Furniture that allows some physical movement, such as a spin or wobble seat, or a chair that flexes, can be provided based upon need. Some people may find it challenging to "stand in line" or queue, and it may be useful to have an alternative option for those who need it.

Clarity	Choice	Calm
Clear routes	Space allows options of where to sit	Balanced, orderly spaces
Familiar, logical layouts	Variety of views	Views of nature
Space to move when needed.	Opportunities to spin or experience a little movement such as rocking, jumping etc.	Nooks and recesses give opportunities to pause and dwell in corridors and classrooms, escaping the noisy and often rapid movement by others.

Resources:
To find out more about individual typical space preferences (proxemics), see PAS6463 5.2.2.

6 Navigation and wayfinding

6 Navigation and wayfinding

Making journeys can be challenging for people who experience differences in identifying, processing and remembering sequences, numbers, words or even left and right. This could be, for example, travelling from home to school or a place of learning, transitioning from one building to another, or even to the toilets and back. Larger settings can have complex routes, linked buildings and multiple floors.

Getting lost affects confidence and incites anxiety, so age-appropriate easy way-markers are welcomed, such as painted footstep trails for small children, and colour coding with symbols for later years. For older children and young people in secondary age provision, spaces can feel quite repetitive which can be a daunting experience for anyone who finds sequential processing difficult. The placement of unique or memorable scenes or objects such as a sculpture or artwork feature can be helpful memory joggers and/or give reassurance of moving in the right direction.

Sounds in the environment can inform wayfinding for people with sight loss conditions and audio signs, Braille and embossed text may also be important for some. Supplementing text with symbols can be helpful for everyone, but particularly beneficial for learners who use BSL as their first language, where Makaton is used or English is a second language. Used consistently, symbols can also be easier to interpret for people with low vision. Sightlines and views are helpful in allowing a level of preview, which can reduce anxiety before entering an external or internal space, making the transition more comfortable.

6.1 Signage

Consistency is important in both positioning, style and format of signage. On long routes confirmatory directional signage along the key decision-making points in the building can be helpful in identifying key facilities such as toilets, specialist areas like quiet rooms, and routes to other buildings. Temporary notices, pinboards etc., can cause visual clutter which is distracting and should therefore be located away from key signs.

Signage text must be of an appropriate size for the viewing distance and purpose. For example, a direction sign that needs to be seen from the carpark will be very different to a door sign for a toilet. The sign content must contrast well against the background of the sign, and the background colour must either contrast from the surface it is placed on, or a border introduced. Before committing to a fixing height for the signs, styles, and colours, it may be useful to create a mock-up for assessment by all building users. BS 8300 contains helpful information on accessible signage but a summary of key facts is given overleaf.

For signs, notices and other displays, the following are key principles to adopt (and consistency across the environment should be encouraged):

- Use matt surfaces to reduce any reflection;
- All information, whether on screen, or on printed materials, should avoid block capitals as they are harder to read quickly due to the lack of word shape. This is likely to particularly affect people with low vision or dyslexia;
- Underlining and italics should be minimised as they make the words harder to read;
- Bright red text is known to distort in appearance for some people and cause eye strain, so should be used sparingly;
- Plain, sans serif fonts are easier to read, (with the exception of ComicSans which is known to cause difficulties for some people with dyslexia);
- Using line spacing minimum 1.15 and preferably 1.5 is helpful;
- Tactile features, such as embossed text and symbols and Braille is beneficial with low vision or considering wayfinding technology for those able to use it;
- Signs can also be used to provide logical order to storage. This can help people who might have difficulty remembering where things should be put or can be found;
- Having a template for notices can be helpful to ensure clear fonts and text sizes are always used. Where appropriate, signs that are intended for pupils with learning disabilities could potentially include space for Makaton/ PECS symbols to be added at low level.

6.2 Wayfinding technology

Technology is increasingly being used to wayfind by everyone. The use of mobile phone apps and digital signage can allow a degree of flexibility for building users but should never replace fixed signs.

Clarity	Choice	Calm
Clear signage and waymarkers make navigation clearer.	Easy read, sensory mapping allows easier identification of places to collaborate or to focus.	Accessible signs reduce anxiety and stress.

Resources:
PAS6463 section 6 for specific guidance on neurodiversity and wayfinding.

For more information on accessible wayfinding for everyone, including wayfinding technology and conventional signage systems, see Sport England's AISF Guide Part E.

Accessible and inclusive sports facilities | Sport England

7 Temperature and air quality

7. Temperature and air quality

This section covers many of the services that enable buildings to be comfortably used, such as heating, ventilation and air conditioning. People who experience sensory differences are often more profoundly impacted by variations or extremes in air quality, temperature and humidity as well as scents or odours in the environment. These factors can be very dynamic and are affected by the time of day, season, weather, occupancy and activity as well as the individual's interoceptive ability or bodily sense.

The sense of smell (olfaction) is known to be hypersensitive (hyperosmia) in some neurodivergent individuals, as well as being a factor in other conditions, such as hormonal changes (eg during pregnancy, menstruation or menopause), as well as Long COVID. Ventilation is very important in removing odours and allergens from internal environments. Listed right are actions that can help:

7.1 Reduce sources of smell

- Select building products, furniture and materials with low VOCs (Volatile Organic Compounds);
- Procure scent-free cleaning products and low scent air fresheners;
- Activities, such as arts and craft, may use materials like glues, paints or clay that can produce unwanted smells. Use low odour products to reduce this risk;
- Choose indoor plants that help air quality (such as Bamboo Palm and Snake Plant), and are low scent and hypoallergenic;
- Consider providing shower and laundry facilities and storage for spare clothing to accommodate a range of circumstances.

7.2 Provide appropriate ventilation

- Consider purging buildings by ventilating out of hours to remove odours;
- Ensure humidity levels are controlled – high humidity can particularly affect some neurodivergent people, including people with epilepsy;
- Ensure extract systems are adequate for areas producing smells such as canteens, kitchens, Design and Technology wood, metal and plastic workshops, science labs, toilets and bins. Being able to close doors may help;
- Encourage staff to make localised adaptations to address air quality, temperature and odours in the classroom, such as opening windows, switching on extraction fans and/or adjusting heating. Adjustments should be made taking note of external conditions e.g. wind, temperature, dust, smells, noise.

Clarity	Choice	Calm
Spaces associated with strong smells could be identified eg changing rooms, toilets, dining, crafts.	Live sensory mapping may allow strong smells to be avoided.	Ensure extracts and fans are low noise.

7.3 Temperature

Some people have difficulty distinguishing hot from cold, either in their own bodies or when touching surfaces. These issues can lead to discomfort, distress or danger and are not limited to young children.

- Allow flexibility in clothing as some people may not sense hot and cold accurately;
- Keep surfaces within safe temperature ranges as some people may not be able to sense danger through touch;
- Identify preferences of location from warm to cooler e.g. sit close to a window.

8 Acoustics, sound and hearing

8 Acoustics, sound and hearing

8.1 Reactions to noise

Noise is known to deeply impact the ability of people to concentrate and absorb new information. It can particularly affect wellbeing, comfort and fatigue levels for people who have hyperacusis through hearing loss or have hypersenstivity often accompanied by a reduced ability to filter out unwanted sounds. It is often a key contributor to sensory overload. While loud impact noises can bother almost everyone, other people can be hypersensitive to different levels and types of noise and certain sounds can cause an anxiety or fear approach, known as phonophobia. This could include certain frequencies and lower volume, softer sounds like breathing, chewing (often associated with misophonia), a ticking clock or the continuous hum or whir of a fan (e.g. ventilation, ovens, computers). Conversely, noise that is self-controlled, such as small repetitive sounds generated by some stimming devices can be beneficial for some.

Sudden, or continuous loud sounds (such as hand driers or musical performances) can trigger balance (vestibular) challenges or cause bouts of tinnitus as well as triggering anxiety, meltdown or shut down. Learners who are D/deaf are particularly affected and can experience gaps in learning due to a noise or highly reverberant environment. A common symptom of inner ear damage is recruitment, where small increases in sound are perceived as much louder and become overwhelming.

For considerations of large open spaces, see also section 5.2 in this guide.

See PAS 6463 Table 2 for suggested acoustic values for different area types.

8.2 Background external noise

Opening windows allows in the sounds from outside, for example a railway, busy traffic, aircraft, agricultural machinery, construction noise or activities such as sports.

This could be offset by intentionally introducing some background sounds (sound scaping techniques) but always requires testing as some people with highly acute hearing (which includes many young children) may hear sounds above and below the normal anticipated frequencies. External features like organically shaped landscape mounds (berms), raised beds, and acoustic fencing could be considered in conjunction with advice from acoustic experts. Dense tree/bush planting may provide a visual barrier and provide some natural masking noise due to movement in the wind.

8.3 Activity adjacencies

Considering adjacencies from an acoustic and noise perspective, either in the design of a new building, or organisation of an existing building or the location of an outside space, can ensure high noise areas do not adversely impact areas of focus or calm. Physically separating noisy and quiet activities and spaces can reduce the need for further acoustic measures. It may be necessary to acoustically separate classrooms and collaborative spaces such as atria or halls, which can be very noisy and have hard surfaces which can cause excessively long reverberation times. Air handling units can be a constant source of noise and should be located to minimise noise transfer to occupied spaces.

Floor finishes – hard flooring can potentially create impact noise when it has no acoustic absorbency. Carpet or acoustic vinyl floor finishes will assist with reducing impact noise and carpet, in particular, will also aid sound absorption.

Where hard floor finishes are required, such as in laboratories, an impact resistant resilient layer installed below the floor finish helps to control impact sound transmission. D/deaf children, in particular, should not be seated near sources of background noise that can interfere with their hearing technology.

8.4 Acoustic absorbers

In some existing situations it could be useful to introduce mobile screens of acoustically absorptive material that can be put in place for certain activities or to divide spaces to reduce noise (subject to assessment by an acoustician). Robust wipeable acoustic materials are available that are impact resistant and these would be suitable for sports halls performance/assembly spaces and dining areas where damage is more likely through activities and the movement of equipment and furniture.

- Acoustic wall baffles, ceiling rafts or acoustic ceiling tiles may be good additions in problem areas;
- Furniture and soft furnishing can help reduce reverberation, and some items are specifically designed to absorb sound and could be added retrospectively;
- Adding soft finishes can help, such as curtains, floor cushions, rugs or even acoustic pads under desks and pads on chair legs to remove the risk of chairs scraping on a hard floor.

8.5 Noise source reduction

Removing unnecessary background noise can be helpful. Common issues are a constant buzz or hum from lighting, exposed pipes, or open plan spaces without doors, all of which can affect people who are hypersensitive to noise. Turning items off at the socket when not in use will avoid some discernible sounds, such as the low hum of a printer.

Suggested recommendations to consider with an acoustic consultant could include:

- Select low noise appliances. Hand driers in toilets are best avoided but if these must be provided, then low noise types are available. (Quiet Mark is an independent global certification programme associated with the UK Noise Abatement Society charitable foundation which certifies quiet products);
- Soft close mechanisms for cupboard doors and toilet seats or adding silicon rubber bumpers retrospectively can reduce slamming;
- Where PA systems are used to mark the end of lessons and these are loud and intrusive, consider less aggressive incremental melodic sounds or provide a subtle warning in advance so that noise sensitive people can prepare and perhaps wear noise reducing headphones;
- Where fire alarm sounders are used, it is important that they sound distinctly different to the end of lesson signal, for example potentially with a voice alarm for evacuation. A beacon that flashes as well as sounds will be helpful to people with profound hearing loss who may not hear the alarm at all. Expert advice should be sought in each situation;
- Fire and emergency alarm procedures that allow a few minutes for staff to verify the alarm is genuine are helpful in avoiding unnecessary loud alerts for false alarms.

8.6 Quiet times

It may be helpful to plan quiet times throughout the day when background effects or music are switched off and quieter learning and activity take place. Break times and movement between classes are some of the noisiest times of day but could be staggered, or acoustic considerations given to alternative routes.

Clarity	Choice	Calm
Background noise levels are reasonable, allowing important sounds to be heard e.g. PA system, communications etc.	Able to adjust fans, open a window, close a door. Range of busy and quiet spaces to suit individuals.	Good acoustics in relevant areas, keeping noisy areas away from quiet spaces. No hand-driers or other high noise devices.

Resources:
For technical information and standards on appropriate acoustic values, see:

PAS6463 section 10. (A table of recommended acoustic values for rooms is provided in PAS6463 Table 2).

Building Bulletin (BB) 93 Acoustic design of school's performance standards (Scottish Government guidance (2007) supports design improvements based on Building Bulletin 93 (GOV.UK)

For further general guidance on assistive listening systems, see BS8300-2 s13.1 and Table D1.

National Deaf Children's Society Acoustics toolkit:
Creating a good communication environment as an educator
Creating good listening conditions

BATOD acoustic standards

9 Light

9 Light

Providing appropriate lighting and minimising glare are key factors in achieving sensory comfort, enabling lip reading and navigating with low vision. This section explores both daylight and artificial light, glare and shade and how to create the right lighting for different circumstances or activities. This includes seeing detail in presentations, when lipreading or watching a sign language interpreter. The viewing angle and the background it is seen against is critical and lighting and glare are significant considerations. Everyone can experience glare to varying degrees, from discomfort to complete visual disturbance known as disabling glare. This can be caused by direct exposure to bright sunlight or exposed light fittings, and also indirect reflection off shiny surfaces.

(section 10 focuses on the visual qualities of surfaces and finishes including how these interact with light and the potential to contribute to visual disturbance and sensory overload).

9.1 Lighting type and adjustability

Different activities require different types of lighting and individuals also have different responses to light. For some activities it will be appropriate to have a consistent light level across the whole area but sometimes it is more helpful to have a few areas brighter than others depending on activities and circumstances as well as individual needs. For example, many children are sensitive to bright artificial lighting, especially cooler, bluer tones which may often help people with sight loss conditions to maximise their visual acuity. Warmer white lighting (3000 Kelvins and below) feels less intensive even at the same brightness level so is often favoured by hypersensitive individuals. The lighting level that is required for reading and writing on paper will be very different to what is comfortable when working on a backlit computer screen. The potential to adjust the brightness and colour temperature of lighting is helpful in ensuring everyone has visual comfort.

Full spectrum LED indirect or adjustable direction lamps (typically directing light up onto the ceiling first) removes the risk of dazzling or startling building users from the direct light source. Dimmer switches can be helpful but with caution about their specification, to avoid flicker or buzz. Having different types of lighting within a learning environment enables staff to provide a variety of settings, from brighter lighting for artwork and focus work alongside lower levels in a calming quiet corner, or pockets of softer lighting for some learners.

9.2 Flicker

LED lamps are preferred for energy efficiency but these need careful design and specification in order to provide flicker-free light, especially when dimmers are fitted. Many people who experience visual hypersensitivity are highly affected by flicker, even when it is not readily apparent to them. Flicker can also be an issue for a wide spectrum of users, causing headaches and eyestrain, so carefully designed LED lighting is important.

9.3 Adjustments to existing buildings

For existing buildings not undergoing any refurbishment or new lighting installation, it may be possible to turn off the main lights for some activities and use local power sockets to add floor or task lamps for different types of light quality for task work, (taking care that cables do not create any trip hazards).

9.4 Daylight and windows

It is usually very beneficial for people to see views of nature outside; this is calming and rests the eyes providing there is not too much distracting activity. Flexible solutions for addressing direct sunlight, glare or distractions through glazing are possible without making the entire space devoid of daylight.

9.5 Blinds and curtains

The following considerations may be helpful:

- Choose plain soft whites, muted or pastel colours. Colours that are plentiful in nature such as greens and blues, are more restful;
- Some patterns may be acceptable, for example low contrast fractal patterns such as a gentle outline of trees, but caution is needed as even with patterns occurring in nature, some people will be distracted and become fixated on checking the repetition within the pattern. Horizontal or vertical stripey patterns are to be avoided;
- A translucent blind that allows some light in can be helpful – for example giving the outline of trees and plants outside, but not a view to other activity;
- All blinds will need suitably secured mechanisms;
- Slatted blinds should be avoided as they often allow slivers of bright light through, and create patterns on other surfaces, both can be visually disturbing. For slatted blinds in place already, using the blind when the slats are fully closed will reduce striped light patterns;
- Sometimes it will be sufficient for a blind to be pulled partially down or across to protect users from sunlight entering the window, thereby maintaining a view out through the exposed part of the window;
- There can be a benefit to having both black-out and translucent blind options on some windows. One solution is to fit two separate blinds, but there are also double roller blinds that have both a translucent and a black-out option within the same blind.

9.6 Glazing film

Glazing film (manifestation) can be used for multiple purposes, such as solar control, shading, diffusion of light, signage and information, and safety warning of the presence of glass.

Glazing film can be applied for a more fixed solution for glare to all or part of a window. There are different levels of film density that can be used, and this type of film is usually very easy to remove without damaging the glass if circumstances change. Linear and busy patterns should be avoided as these can cause visual disturbance.

Note:
Glazing manifestation is a regulatory safety requirement on full height glazing and should be considered by appropriately qualified consultants in relation to relevant technical standards. An additional lower band of manifestation is beneficial on glazing that extends to floor level where small children will be present.

Clarity	Choice	Calm
Comfortable ambient light levels for movement and wayfinding without glare.	Adjustability in both lighting brightness (dimming, on/off) and colour temperature control. Window treatments to control daylight.	Warm colour temperature, flicker free lighting to some areas with adjustable brightness and black out blind options.

Resources:
PAS6463 section 10 Light, Lighting and Reflection. See PAS6463 5.5.1 Window treatments

10 Visual and finishes

10 Visual and finishes

A great deal of information is interpreted through vision; therefore, the appearance of physical environments plays a big part in people's ability to interpret, navigate and make sense of spaces as well as how comfortable they feel.

Thoughtful use of materials, colour and patterns can contribute to visual familiarity, comfort and clarity. This should be considered alongside the spatial aspects described in section 5 and daylight and artificial lighting as explored in section 9.

10.1 Visual Distraction

Many people benefit from being in environments with fewer distractions, especially people who are visually hypersensitive or have concentration challenges. Adaptations could include lowering visual stimuli, for example separating play/toy areas with a mobile screen (or curtain where appropriate) creates a clear boundary and encourages better focus on the current activity. In some classes, proximity to views of activity through windows or glazed panels can be distracting and the use of blinds may be beneficial some of the time. (see section 9)

Visual clutter is common in learning environments and often results from too many visually different items on display, multiple colours around the room, and the use of patterned materials. Sometimes this causes visual disturbance which can trigger fatigue, nausea, anxiety, affect balance and depth perception, and contribute to sensory overload.

- Clutter at eye level and below is very important but clutter on a ceiling can also be highly distracting for some people. Exposed soffits with pipes and ducting should be generally avoided or painted in the same colour as the ceiling, and artwork such as ceiling mounted sculptures or hanging items should be assessed for impact;
- It is helpful if display materials are minimised on the main teaching wall so that learners are able to focus on the teacher, the whiteboard or the display screen, rather than be distracted by other items;
- Display areas should be positioned where children may dwell but should not impact other learning at the wrong time, appropriate areas may be above sinks, coat hooks or near toilets rather than on the main wall from where the teacher will direct learning;
- A feature wall at the rear of the room, on which classwork displays can be added, keeps all the clutter and stimulation in one zone which can be more easily avoided during lesson time;
- Mobile screens that can be moved from one area to another can be a solution where there is not enough wall space once the teaching wall has been cleared. Alternatively, a pull-down blind can instantly hide a busy wall. Digital screens can be used to provide displays when needed but turned off to avoid distraction at other times;

- Wall finishes should be generally plain, and in particular avoid vertical or horizontal lines, checks, or blocks of strongly contrasting colours. A less stimulating alternative is the use of a fractal pattern found regularly in nature, such as leaf, flower or tree patterns. The same is true for façade design where busy linear patterns can overwhelm due to the physical size and visual dominance;
- Different locations within the same space will have different visual characteristics and it may be useful to provide choice of seating location for individuals to suit their individual preferences or for teachers to guide individual choices to minimize distraction.

10.2 Use of colour

For many learning environments, particularly early years and primary settings, there is an intention to create a positive and vibrant impression on arrival through the use of bright, vivid colours. Once inside the facility it is better to opt for muted colour schemes so that too much colour and stimulation do not result in sensory overload for some people.

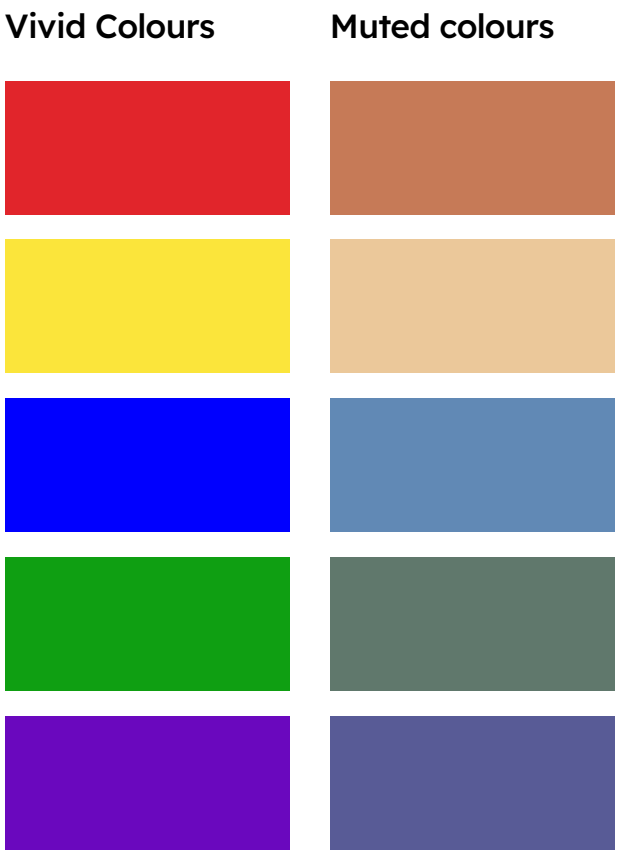
Over-stimulation leading to overwhelm can be cumulative, from either multiple simultaneous but different sources (noise, brightness, movement), but can also occur from one type of source, for example, the use of too many colours within a space.

- When creating displays, using a simpler, restricted colour palette for backing card will reduce visual stimulation;
- Blues and greens (common in nature) are more calming than reds and yellows. Muted tones of any colour are helpful, for examples, see heritage paint palettes;
- Brilliant white can feel stark and clinical, whereas softer, matt whites and shades of white will feel less startling.

10.3 Reflective surfaces

Reflective finishes are mentioned in section 9 as they play an important part in how light behaves. Reflective surfaces should be used minimally as they can confuse, distort and introduce visual clutter and confusion. This makes it harder to understand and navigate through a space, sometimes resulting in people knocking into items and increasing their anxiety.

- Choose washable matt paints – historically, gloss paint was often used in schools for its durability, but many low sheen products are now available that are equally robust and wipe clean;
- Position mirrors carefully to reduce distraction or confusion when not in use. Mirrors over basins should be a suitable height for their intended purpose but no full height mirrors going all the way to the floor should be provided as these are confusing to people with sight conditions who may mistake them for an opening.



Clarity	Choice	Calm
Simplifying displays to certain areas.	Potential to add a screen or blind to hide a busy wall.	Use muted colours for finishes and displays, add plants.

Stair nosings should be visually contrasting but not so bright that they dazzle or cause visual disturbance. Scenic (glass) lifts are challenging to people with vestibular conditions, and lift finishes are often steel which can be reflective. See PAS 6462 12.1 and 12.6.2 for more on lifts.

See PAS6463 section 12 Surface Finishes.

Visual contrast between key surfaces is helpful to visually impaired people and adds clarity – this should meet national guidance. Refer to BS 8300-2, (Clause 12, and Annex B) for guidance on visual contrast and light reflectance values.

11 Furniture, fixtures and equipment

11 Furniture, fixtures and equipment

The items placed within an environment, outside or inside, can completely change the way the space is used and impact significantly on the sensory experience.

11.1 Furniture

- Furniture made from natural materials such as stone plinths or timber benches/ tables are more therapeutic than plastic or metal, which can feel sticky and uncomfortable in hot weather conditions;
- White surfaces, such as desks and counters, should be avoided for focus work, as they can reflect light. A medium tone such as a light blue or gentle green is helpful for eye comfort. (Desk mats can be added to existing desks to change the colour and texture);
- Furniture should visually contrast from the surfaces it is seen against as this will reduce knocks and bumps. (see section 10 for further information on colour and contrast);
- Modular lightweight wheeled tables and desks allow easy reconfiguration for activities or variation in spacing for someone who is impacted by close proximity;
- Rounded corners are helpful in preventing injury, especially for people who tend to bump into furniture.

11.2 Seating

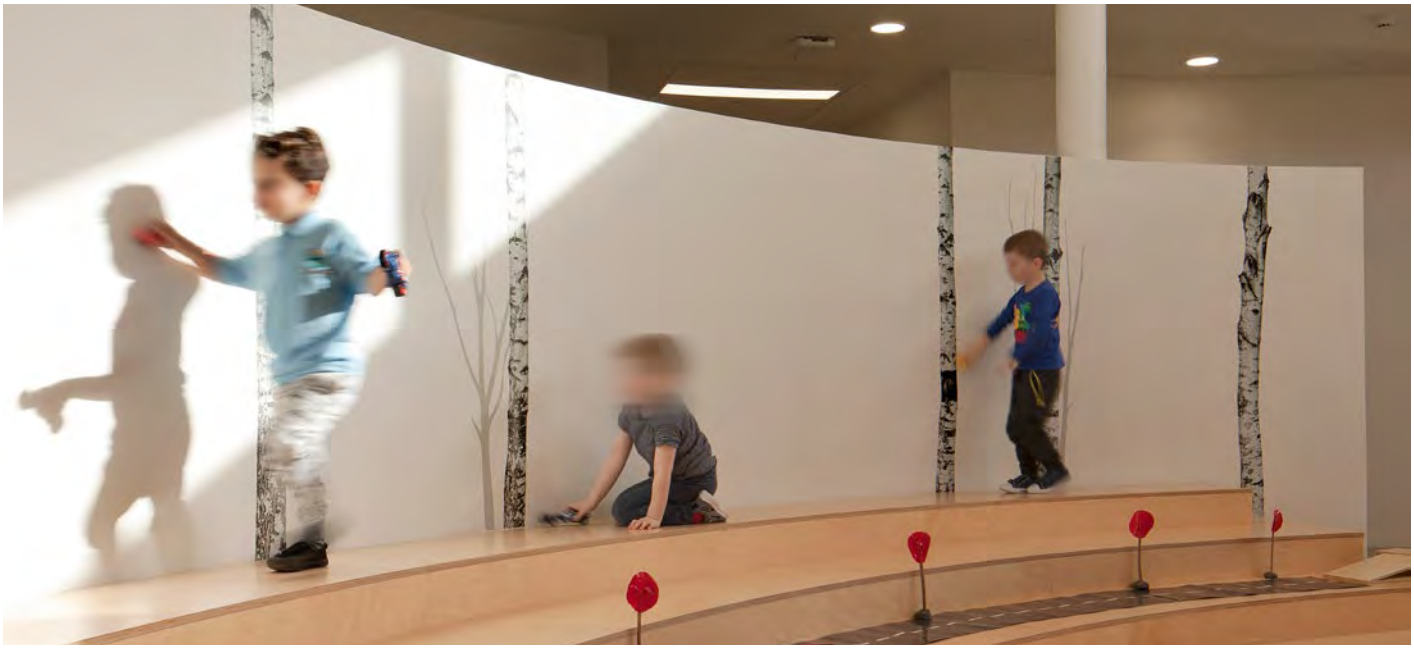
- Having a variety of seat types is recommended;
- Some seats or recesses (nooks) are beneficial;
- Lightweight stackable seating allows space to be cleared easily when activities change;
- Providing floor cushions or bean bags in a quiet corner can contribute to a welcomed retreat when needed, especially if there is not a dedicated quiet room to escape to;
- Chair backs that allow a little movement (flex) can be beneficial. Existing chairs that do not have this, can be adapted by adding a cushion, wobble seat pad and/ or having an elastic band around the chair legs to give feedback to the user (grounding);
- Seating (and/or desks) with high sides can reduce visual distraction and potentially include absorptive materials to reduce noise;
- Adding pads to the bottom of chair and table legs avoids unwelcomed scraping sound on hard floors.

11.3 Fixtures

- When acquiring new products, avoid shiny reflective finishes, for example choose play equipment that is matt or timber, worktops or tables with a low sheen finish, and chrome and stainless-steel door handles or taps should be brushed finish not polished. (See section 10 for more about reflective finishes);
- Some people may use devices such as tablets or laptops for most of their written work. Desks that have integral sockets enable learners with assistive aids such as laptops, headphones and assistive listening devices freedom to sit anywhere in the class without introducing trailing cables;
- Localised storage for teaching materials and personal effects such as coats, shoes and assistive aids can add orderliness and minimise clutter. It also ensures that aids and equipment are close at hand and can easily be brought into use;
- Building an intentional space into a storage wall that is left partially open can be an inviting place to curl up and may help someone to regulate and calm themselves. It is often important to maintain sightlines so integrating opportunities for cosy, quieter nooks, where staff can supervise casually is beneficial.

Clarity	Choice	Calm
Layout, rounded corners and visual contrast makes spaces easier to navigate. Enclosed storage reduces visual clutter.	Socket positioning, and modular moveable furniture provides choices to be made on layout and application.	Softer finishes feel welcoming and help acoustics, floor cushions feel more grounded and safer.

Resources:
PAS6463 section 13 Fixtures Fittings and Furniture



12 Quiet and sensory spaces

12. Quiet and sensory spaces

Recommendations in this guide are intended to be applicable throughout all learning spaces for all ages, however there are some spaces which need to be designed and managed to provide a tailored and specific sensory experience. These may need to support people who are either hyper or hypo sensitive and therefore may require spaces such as a dedicated quiet space or a sensory stimulating space.

In existing buildings, it can be challenging to find space for both sensory stimulating and quiet spaces so the space may need to be adapted to accommodate the priority need of a particular cohort or individuals. The primary aim should be to create the restorative aspects of a quiet room, with some stimulation from small items within the storage unit. Additional stimulating environments can potentially be created in separate areas of the classroom if needed.

(Sometimes there are large storerooms within or adjacent to classrooms that can be successfully turned into small quiet spaces or sensory spaces). There are also many "pods," sensory tents and other products available for this purpose. Seats that cocoon, like an egg chair that spins, or round swing seats on a frame are available for inside and outside environments.

12.1 Quiet rooms

Quiet rooms or enclosed spaces (inside or outside) are intended to be low stimulation, calming, restorative environments for an individual experiencing anxiety, episodes of dysregulation, sensory overload, meltdown or shutdown. Such facilities are intended as an individual space which offers privacy but can be used with or without a member of staff, as may be appropriate. Sometimes people experience a combination of hyposensory (sensory seeking) for some of the senses and hypersensitivity to others. It is therefore important that quiet rooms offer some ability to stimulate, such as having an enclosed small storage cupboard that contains a few stimulating items, for example stimming, fidget or tactile feedback that can be used by an individual whilst using the room.

12.2 Sensory spaces

Sensory spaces are for people who are sensory seeking (hyposensitive). Sensory rooms may be used during dysregulation but are generally intended to be a highly sensory stimulating experience. Such spaces usually have lots of stimming, fidget and visual devices such as coloured light strands, music and other sounds. These spaces are often larger than a quiet room and can usually be shared with others. (see image on previous page)

Comparative qualities (typical)	
Quiet Rooms	**Sensory Spaces**
Quiet (but not silent) environment;	Highly energetic space;
Intimate and small - large enough for one person who needs support, plus supervising adult/s if needed;	Often large enough to accommodate several people simultaneously and space to pace but usually with boundaries such as sensory tents or pods within larger spaces;
Feels tidy, orderly and self-contained, with good acoustics and sound separation;	Flexible in layout, intended to be used intuitively, perhaps with colourful soft blocks that can be repositioned to sub- divide the space or protect young children;
Low or standard height ceiling, or a mix;	High or standard ceiling, or a mix;
Simple, muted colour palette;	Vivid mixed colours;
Low lighting with warm colour temperature, able to have complete darkness;	Lighting options include multi-coloured lighting and fibre optic strands, sometimes lights projected onto ceiling (stars, planets);
• Natural materials and plants; • Includes low seating to feel grounded; • Scent free space.	• Multi-sensory, to stimulate sensory integration (visual, auditory, tactile); • Immersive experiences with movement, such as ball pits; • Contains items for sensory feedback, such as fibre optic strands, furry cushions etc.
Applicable to both types of space: • Offers reasonable privacy (under adult supervision); • Soft finishes to lie or sit on (ideally sponge/wipe clean for hygiene reasons); • Nooks and crannies to curl up in; • Able to shut out light from adjacent spaces or windows when needed. Equipment that could be helpful to keep in quiet and sensory rooms include: • Stimming and fidget items; • Music player; • Noise cancelling headphones; • Soft blankets to touch or curl up in; • Breathable weighted blankets for extra feedback.	

Resources:
PAS 6463 section 14, Annex B, Table B1 has a checklist for achieving suitable quiet and restorative spaces or rooms.

13 Further information and resources

13 Further information and resources

Design and Management Guidance

BSI PAS6463 Design for the Mind – Neurodiversity and the Built Environment 2022, is FREE TO DOWNLOAD and contains deeper technical guidance. British Standards.

Neurodiversity in planning
This is an excellent resource for good practice around engaging with neurodivergent members of the public and stakeholders. When developing the brief for new schools or major refurbishments.

Inclusive Design Overlay to the RIBA Plan of Work This overlay provides guidance on implementing inclusive design through each RIBA Plan of Work stage.

A&DS Design elements for school grounds: ideas to inspire
This free resource offers practical advice and inspiration for small scale interventions on school playgrounds

Sport England's Accessible and Inclusive Sports Facilities Guide guidance for planners, designers, building owners and operators to support the design and operation of safe, welcoming, accessible and inclusive sports and leisure facilities.

Managing School Business Operations - a guide for chief operating officers, business managers and headteachers by Jo Marchant MBE, **ISBN-13** : 978-1036006198

The Learning Estate Strategy and its guiding principles provide a platform for investment in the learning estate across Scotland and set out our strategic approach for managing the learning estate.

Acoustics

Building Bulletin (BB) 93 Acoustic design of school's performance standards (Scottish Government guidance (2007) supports design improvements based on Building Bulletin 93 (GOV.UK)

National Deaf Children's Society Acoustics toolkit:
A wide range of practical resources, expert guidance and training to support your work.

Creating a good communication environment as an educator
Practical tips to improve sound quality and ensure your space and teaching support clear, inclusive communication – whether spoken or signed

Creating Good listening environments
Highlighting some of the ways that settings can improve listening conditions.

BATOD acoustic standards: legislation and guidance
The standards and guidance provide criteria for school acoustic design and access.

Biophilic Design:

Nature by Design: The Practice of Biophilic Design — Stephen R. Kellert (2018)

Journal of Biophilic Design

Lighting

Sensory Friendly LED lighting

NDTI website has some guidance on lighting in healthcare which is also applicable to other environments such as learning spaces.

Support materials and guidance

Cumbria Country Council 2026: Supporting Children with Sensory Processing Needs in the Early Years
Supporting Children with Sensory Processing Needs in the Early Years

Architecture and Design Scotland guide on using to design to support inclusive and accessible learning environment:
Designing for inclusive and accessible learning environments

LEANS is a free curriculum to introduce pupils aged 8-11 to the concept of neurodiversity and help them explore how it impacts school experiences.

Designing inclusive places online resource for the built environment

Space to grow and thrive design guidance for early learning and childcare and school age childcare settings. Free download

Education Scotland

Sensory Audit for Schools and Classrooms is a downloadable resource audit spaces to help staff assess and create an environment that enables the participation of pupils with autism

For staff/workplace:

Neurodiversity at work, 2021, Theo Smith and Amanda Kirby, ISBN 978 1 3986 0024 9

For learners:

The Brain Forest, 2022, Sandhya Menon National Library of Australia ISBN 978 0 646 85609 4

50 fantastic ideas for supporting neurodiversity, 2023, Ker4ry Murphy and Fifi Benha, Bloomsbury ISBN 978 1 80199 218 3

Wonderfully Wired Brains, 2023, Louise Gooding ISBN 978 0 2415 6816 3

My Body's power pack – How to manage your energy and stay in charge!, 2025, Sandhya Menon ISBN 978 1 80501 825 4

Organisations and Networks

Hearing

The Aural Diversity Network
Aural diversity describes the wide range of variations in hearing across individuals – differences include deafness, noise-related, genetic, ototoxic, traumatic, and disorder-based hearing loss. Auditory processing differences such as tinnitus, hyperacusis, and misophonia also involve heightened sensitivity rather than "loss."and populations. The Aural Diversity Project explores all these differences in hearing and their consequences in any setting that involves sound. Newsletters are also provided.

National Deaf Children's Society Scotland (NDCS) – Education rights, family support, transitions

British Deaf Association Scotland (BDA Scotland) – Deaf culture, BSL, rights and advocacy

Deaf Action (deafled) – BSL, interpreting, advice line, mental health, housing and community services

Deafblind Scotland – Specialist support for people with combined sight and hearing loss

Ménière's & Vestibular UK is the only registered charity in the UK dedicated solely to supporting people affected by dizziness and balance problems caused by vestibular disorders.

RNID (Royal National Institute for Deaf People) Scotland – Information, community dropins, benefits, assistive tech, campaigning

Sense Scotland – Communication support for people with complex and sensory disabilities

The National Register of Access Consultants | NRAC UK Register of accredited accessibility and inclusion specialists.

Neurodiversity

National Autistic Society Scotland
Scottish arm of NAS with education rights, transitions support, and local services

Scottish Autism
Scotland's leading autism charity; services, advice line, policy influence, and research.

Autistic Care Collective, list of autistic people led organisations, Includes AMASE (Edinburgh), ATLAS, Autism Understanding Scotland, SWAN.

National Autistic Society (NAS)
The largest and most established autism charity in the UK; advice, advocacy, education, and local services.

ADHD Foundation – The Neurodiversity Charity
Covers ADHD, autism, dyslexia, dyspraxia, Tourette's and more; strong in education, workplace training, and public campaigning.

Young Minds
The Uk's leading charity providing support to young people to look after their mental health. They help empower adults to be the best support they can be to the young people in their lives.

Scottish ADHD Coalition
Umbrella body connecting local ADHD groups; strong policy voice with Scottish Government.

Ambitious about Autism
Focus on autistic children and young people, education pathways, and transitions to adulthood.

ADDiSS (Attention Deficit Disorder Information & Support Service)
Longstanding national information and signposting service.

Dyslexia Scotland
National Scottish charity for dyslexia and inclusive education; very influential in schools policy.

British Dyslexia Association (BDA)
The national authority on dyslexia; education, workplace adjustments, and policy influence.

Dyspraxia Foundation
Specialist UK body for DCD/dyspraxia across lifespan.

The Donaldson Trust (National Body for Neurodiversity in Scotland)
Crosscondition, systemslevel work across education, justice, and employment.

STAND (Scotland)
Grassroots, parentcarerled, strong advocacy and livedexperience focus.

DIFFERabled Scotland
Peer support for neurodivergent adults and parents/carers (pre and postdiagnosis).

Sight

RNIB Scotland – Advice, Eye Care Liaison Officers (ECLOs), employment, benefits, reading services, children & families

Sight Scotland – Scotland's largest sightloss charity (formerly Royal Blind); rehabilitation, advice line, education (Royal Blind School), policy and campaigning

Visibility Scotland – Independentliving support, hospitalbased services, assistive technology, wellbeing and peer support

Guide Dogs Scotland – Guide dogs, mobility training, family and lifeskills support

Vision Collaborative Scotland – Umbrella collaboration of sightloss organisations shaping policy and workforce development

Scottish Sensory Centre – Education, research and professional learning on visual & sensory impairment

Credits:

This guidance has been developed through consultation and collaboration with a wide range of individuals, groups and organisations with varying perspectives and expertise whose input has been invaluable.

Guidance Leads

Aberdeenshire Council

Architecture and Design Scotland

Buro Happold

Care Inspectorate

Scottish Futures Trust

Scottish Government

Steering Group

Action on Hearing Loss

ADES (Association of Directors of Education in Scotland)

BDP

Children and Young Peoples Commissioner for Scotland

Children's Parliament

COSLA

Education Scotland

ERZ

Fergus Murray

Inclusion Ambassadors (Children in Scotland)

Marion McLoughlin

National Autistic Society Scotland

National Deaf Children's Society

NORR Architects

Parliamentary Cross Party Committee on Autism

Rankin Fraser landscape architects

RMP acoustics

RNIB

Scottish Assembly of Parents and Carers

Scottish Youth Parliament

Sensational Learning Centre

SHOPS (Scottish Heads of Property Services)

Sight Scotland

SLR Consulting

Sofia Farzana

The Donaldson Trust

University of Edinburgh

University of Glasgow

University of West of Scotland

SCOTTISH FUTURES TRUST

Architecture & Design Scotland
Ailtearachd is Dealbhadh na h-Alba

BURO HAPPOLD

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Introduction
Maybole Community Campus for South Ayrshire Council/BPD/David Barbour

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Waid Academy for Fife Council/BDP/David Barbour

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Dr. Eddie Edgerton

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Winchburgh Community Campus, Ryder Architecture & Morrisons Construction, image supplied by SpaceZero

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Climate Ready School Grounds/Malcolm Cochrane

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Climate Ready School Grounds/Malcolm Cochrane

Benefits of sensory-inclusive learning environments
Calderwood Primary School, JmArchitects & Morrisons Construction, image supplied by SpaceZero

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Overview of design, management and use of physical learning environments
Wallyford Learning Campus/JmArchitects/Cadzow Pelosi

Space and movement
Drumgreith Campus/Holmes Miller/Chris Humpries

Navigation and wayfinding
Woodland View, McLaughlin & Harvey

Temperature and air quality
Wallyford Learning Campus/JmArchitects/Cadzow Pelosi

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Heriot's Centre for Sports and Exercise, LDN Architects/ Paul Zanre

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Castlebrae Community Campus, JmArchitects & Morrisons Construction, image supplied by SpaceZero

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Malcolm Fraser Architects/Angus Bremner

Acoustics, sound and hearing
East Calder, NORR / Keith Hunter Photography

Light
Neilston Learning Campus for East Renfrewshire Council/BDP/David Barbour

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Lockhart Campus, NORR / Keith Hunter Photography

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A&DS/Mearns Primary School

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The Donaldson Trust

Visual and finishes
Wallyford Learning Campus/jmarchitects/Cadzow Pelosi

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Neilston Learning Campus, the Madras Family Centre for East Renfrewshire Council/ BDP/ David Barbour

Furniture, fixtures and equipment
Prestwick North Education Campus for South Ayrshire Council/BDP/David Barbour

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Maidenhill Primary School & Nursery/BDP/David Barbour

Quiet and sensory spaces
Woodland View, NORR / Keith Hunter Photography

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A&DS/Alan Dimmick

Further information and resources
Montgomerie Park Primary School/rankinfraser landscape architecture/Paul Zanre

This publication is available at **www.gov.scot**

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